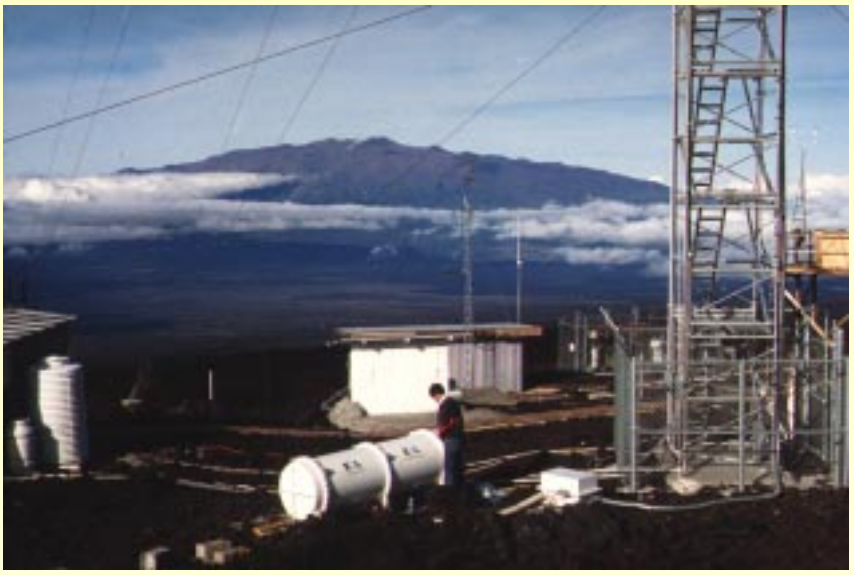
EML

Environmental Measurements Laboratory

Radon Instrumentation

Atmospheric Monitor

EML's Rn-222 analyzers at the Mauna Loa Observatory (a regional baseline station of the NOAA/Climate Monitoring and Diagnostics Laboratory) and at the Atmospheric/Ocean Chemistry Experiment Site at Tudor Hill, Bermuda have been a unique source of reliable Rn-222 data to the scientific community since 1990. Researchers use the data to help determine air mass provenance and the timing of events transporting air that has been in contact with a landmass to the oceanic measurement sites. Additionally, atmospheric modelers use this rare database (available on the EML internet homepage) to test and validate the transport component of general circulation models.



For further information:

Hutter, A. R., R. J. Larsen, H. Maring, J. T. Merrill, ^{222}Rn at Bermuda and Mauna Loa: Local and Distant Sources, J. Radioanal. and Nuclear Chem., Vol. 193, No. 2, p. 309-318, 1995.

Collé, R., M. P. Unterweger, P. A. Hodge, J. M. R. Hutchinson, S. Whittlestone, G. Polian, B. Ardouin, J. G. Kay, J. P. Friend, B. W. Blomquist, W. Nadler, T. T. Dang, R. J. Larsen and A. R. Hutter, An international intercomparison of marine atmospheric Rn 222 measurements in Bermuda, JGR, Vol. 100, No. D8, pp. 16617-16638, 1995.

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Radgrabber Aircraft Package

Using advanced electrostatic collection techniques which eliminate bulky decay chambers and heavy compressors, EML's Radgrabber instrument weighs only 20 pounds, flies unattended and has the sensitivity required to make real time (1 minute) measurements of very low Rn-222 concentrations encountered in the upper atmosphere. Researchers use the Rn-222 data obtained with the Radgrabber to augment other measurements obtained in atmospheric transport studies.

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Radon Instrumentation

Radometer

EML's Radometer is a portable survey instrument used for real time measurements of Rn-222 and Rn-220. A dual electric field configuration eliminates filters and pumps, thus reducing weight and enabling several days of operation with three flashlight batteries (contained in the silver handle). The Radometer rapidly characterizes (3 to 15 minutes) Rn-222 and Rn-220 levels in homes and other sites.

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Barrel Radometer

EML has designed, built and is now testing the Barrel Radometer instrument to replace the much larger Atmospheric Monitors. Although the entire instrument and support electronics are contained in a weatherproof 50 gallon drum, the Barrel Radometer has a Rn-222 sensitivity comparable to the much larger Atmospheric Monitor stationed in Bermuda.

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